भारतीय मानक
Indian Standard

IS 1065 (Part 2) : 2019

स्टेबल ब्लीचिंग पाउडर — विशिष्टि

भाग 2 पीने के लिए उद्दिष्ट जल उपचार हेतु

Stable Bleaching Powder — Specification

Part 2 Treatment of Water Intended for Drinking

ICS 71.100.35

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Inorganic Chemicals Sectional Committee, CHD 01

FOREWORD

This Indian Standard (Part 2) was adopted by the Bureau of Indian Standards, after the draft finalized by the Inorganic Chemicals Sectional Committee had been approved by the Chemical Division Council.

Stable bleaching powder is a carrier of chlorine the ingredient most widely used for bleaching, whitening, sterilization, disinfection and environmental hygiene. The main advantage of stable bleaching powder as against other bleaching powders is that it retains its available chlorine content for a longer period when properly stored.

Improvement in the quality of potable water supply is a thrust area of all municipal and PHED water supply systems. As part of this quest to improve the quality of water supplied, the Committee decided to formulate a separate standard intended for treatment of water meant for drinking purpose by prescribing limit of heavy and toxic metals requirements additionally based on the National Standards and WHO guidelines for drinking water. Hence the committee decided to bifurcate the existing standard in two parts as follows:

a) Part 1 for household use and industrial use; and

b) Part 2 for water treatment for drinking purposes

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 ‘Rules for rounding off numerical values (*revised*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

STABLE BLEACHING POWDER — SPECIFICATION

PART 2 TREATMENT OF WATER INTENDED FOR DRINKING

1 SCOPE

This standard (Part 2) prescribes the requirements and the methods of sampling and test for stable bleaching powder for treatment of water intended for drinking.

2 REFERENCES

The standards listed below contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the Indian Standards:

IS No.	*Title*
1065 (Part 1) : 2018	Stable bleaching powder — Specification: Part 1 Household and industrial use (*under revision*)
1070 : 1992	Reagent grade water (*third revision*)
3025 (Part 41) : 1992	Methods of sampling and test (physical and chemical) for water and wastewater: Part 41 Cadmium
4905 : 2015/ ISO 24153 : 2009	Random sampling and randomization procedures (*first revision*)
11673 (Part 2) : 2018	Sodium hypochlorite solution — Specification: Part 2 Water treatment use (*under print*)

3 TERMINOLOGY

For the purpose of this standard, the following definitions shall apply.

3.1 Available Chlorine — The chlorine equivalent of the hypochlorite chlorine present in bleaching powder.

3.2 Stability — The difference in the chlorine equivalent of the hypochlorite chlorine present in the sample before and after heating it for 2 h at 100 ± 2°C

4 TYPES

There shall be two types of the material, depending on available chlorine.

a) Type 1, or
b) Type 2.

5 REQUIREMENTS

5.1 Manufacture

Bleaching powder shall be manufactured by chlorination of slacked lime.

5.2 Description

Bleaching powder shall be white to almost white in appearance and shall be free from hard lumps and any visible impurities.

5.2.1 The material shall be dry and free flowing.

5.3 The material shall also comply with the requirements given in Table 1, when tested according to the methods prescribed in Annex A. Reference to relevant test methods is given in col 5 of the Table 1.

5.4 Keeping Quality

The material of all the grades shall comply with the minimum available chlorine content for not less than 30 days from the date of packing which should be specified on the container. After a period of more than 30 days the minimum available chlorine for all the grades shall be as agreed to between the purchaser and the supplier.

6 PACKING, MARKING AND STORING

6.1 Packing

The material shall be packed in laminated HDPE bags having two inner liners and tied at the mouth of each inner bag separately with nylon rope, HDPE thread or polypropylene thread and then the outer laminated HDPE woven sack shall be stitched using polypropylene or nylon thread with two rows, each row being done separately, one being above the other for the protection during transit. The material may also be packed in other

Table 1 Requirements for Bleaching Powder for Treatment of Water Intended for Drinking

(*Clause* 5.3)

Sl No.	Characteristic	Requirement		Method of Test Ref to IS
		Type 1	Type 2	
(1)	(2)	(3)	(4)	(5)
i	Available chlorine, Percent by mass, *Min*	34.0	32.0	1065 (Part 1)
ii	Stability, loss of chlorine on the basis of initial available chlorine, *Max*	1/15	1/11	- do -
iii	Moisture percent by mass, *Max*	0.3	0.5	- do -
iv	Particle size (passing through 1.70 mm IS Sieve), percent by mass, *Min*	99.5	99.0	- do -
v	Lead (as Pb) ppm, *Max*	70	70	11673 (Part 2)
vi	Arsenic (as As) ppm, Max	10	10	- do -
vii	Manganese (as Mn) ppm, Max	250	250	- do -
viii	Chromium (as Cr^{6+}) ppm, *Max*	20	20	- do -
ix	Mercury (as Hg) ppm, Max	5	5	- do -
x	Cadmium (as Cd) ppm, *Max*	10	10	3025 (Part 41) or ICP-OES Method
xi	Selenium (as Se) ppm, *Max*	10	10	Cl **28** of 3025 or ICP-OES Method

containers as agreed to between the purchaser and the supplier. The packages used shall be free from dirt or other materials which are likely to cause decomposition of stable bleaching powder.

6.2 Marking

The containers shall be securely packed and marked with the following information:

a) Name and grade of the material;
b) Name of manufacturer;
c) Mass of the material in the package;
d) Recognized trade-mark, if any;
e) Batch number; and
f) Date of packing.

6.3 BIS Certification Marking

The product may also be marked with the Standard Mark.

6.3.1 The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the standard mark.

6.4 Storing

While shipping, the material shall be stored away from the boilers or any other heat source.

7 SAMPLING

Representative samples of the material shall be drawn and their conformity to this standard shall be determined in accordance with the method prescribed in Annex A.

8 QUALITY OF REAGENTS

Unless specified otherwise pure chemicals and distilled water (*see* IS 1070) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

ANNEX A

(*Clause* 7)

SAMPLING OF BLEACHING POWDER, STABLE

A-1 GENERAL REQUIREMENTS OF SAMPLING

A-1.1 In drawing, preparing, storing and handling test samples, the following precautions and directions shall be observed.

A-1.2 Samples shall not be exposed to atmosphere for a longer time than necessary, and sampling shall be done as rapidly and as thoroughly as possible.

A-1.3 Samples shall be placed in a cool and dry place.

A-1.4 The sampling instrument shall be clean and dry when used.

A-1.5 To draw a representative sample, the contents of each containers selected for sampling shall be mixed as thoroughly as possible by rolling, shaking or stirring by suitable means.

A-1.6 The samples shall be placed in clean, dry and air-tight glass or other suitable containers on which the material has no action.

A-1.7 The sample containers shall be of such a size that they are nearly filled by the samples.

A-1.8 Each sample container so filled shall be sealed air-tight after filling, and marked with full details of sampling, the date of sampling, the month and year of manufacture of the material and its grade.

A-1.9 Precautions shall be taken to protect the samples, the material being sampled, the sampling instrument and the containers for samples from adventitious contamination. Care should be taken to avoid direct contact of bleaching powder with skin. Face shall be kept at a safe distance from the container when it is opened.

A-1.10 Samples shall be stored in such a manner that the temperature of the material does not vary unduly from the normal shade temperature.

A-2 SCALE OF SAMPLING

A-2.1 Lot

All the containers in a single consignment of same grade of the material drawn from a single batch of manufacture shall constitute the lot. If a consignment is declared to consist of different batches of manufacture, the batches shall be marked separately and the groups of containers in each batch shall constitute separate lots.

A-2.2 The number of containers (n) to be selected from the lot shall depend upon the size of the lot (N) and shall be in accordance with Table 2.

Table 2 Number of Containers to be Selected

(*Clause* A-2.2)

Lot Size (N)	*Sample Size* (n)
(1)	(2)
2 to 8	2
9 to 27	3
28 to 64	4
65 to 125	5
126 to 216	6
217 to 343	7
344 to 512	8
513 to 729	9
730 to 1000	10
1001 and above	11

A-2.3 These containers shall be selected and random from the lot and in order to ensure randomness of selection, random number tables may be used (*see* IS 4905). In case, such tables are not available, the following procedure may be adopted:

Starting from any container, count them in the order 1,2,3,……., up to r where r is the integral part of N/n. Every r^{th} container thus counted shall be withdrawn to form the sample.

A-3 PREPARATION OF SAMPLES

A-3.1 Draw with an appropriate galvanized iron or other suitable plastic sampling instrument (*see* Fig.1) small portions of the material from different parts of each selected container. The total quantity of the material drawn from each container shall not exceed 2 kg.

NOTE — The dimensions of the galvanized iron or plastic sampling instrument shall depend on the size of the container so that the tip of the sampler should reach the bottom of the container and the sample may contain material from all the layers of material in the container.

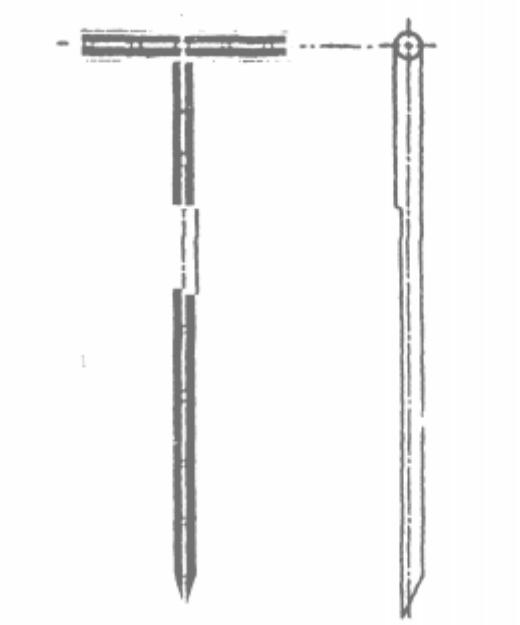

FIG. 1 GALVANIZED IRON OR PLASTIC SAMPLING INSTRUMENT

A-3.2 The material drawn from all the selected containers according to **A-3.1** shall be thoroughly mixed together. The total material so obtained shall be divided into three approximately equal parts each of which shall be called a composite sample to represent the lot.

A-3.3 Each of three composite samples obtained in **A-3.2** shall be immediately transferred to appropriate galvanized iron containers which shall be sealed air-tight immediately after filling and marked with necessary details for identification.

A-3.4 One of the three composite samples shall be marked for the purchaser, another for the supplier, and the third kept as a referee sample.

A-3.5 The referee sample shall be kept at a place and under conditions agreed to between the purchaser and the supplier. The referee sample shall be used in case of a dispute.

A-4 NUMBER OF TESTS AND CRITERION FOR CONFORMITY

A-4.1 Examination and Tests

The purchaser may examine and test separately each of the reduced samples constituting a test sample for compliance with the individual requirements or may prepare for the purpose of such examination and at every stage of the progress of the examination, a composite sample representative of the whole lot by mixing all the reduced samples constituting the test sample.

A-4.2 Criterion for Conformity

When the individual reduced samples in a test sample are separately examined and the results vary from one reduced sample to another so as to show that one or more results are outside the limits prescribed in the specification. The criteria for conformity for the quality of the lot for the purpose of acceptance on the basis of the results obtained shall be at the discretion of the purchaser, unless otherwise agreed to between the purchaser and the supplier.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 2016 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

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Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

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Amendments Issued Since Publication

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